occasional specimens being spotted lightly. I must also mention that the Mountain Chickadee is possessed of a soft and very musical song, although it does not seem to be uttered nearly so frequently as the common-place *chick-a dee-dee*. This song consists of four notes, two being given in the same high key while the last two drop perhaps half way down the scale. To my notion it is very similar to the song of the Golden-crowned Sparrow, but judging from the recent discussion of the latter's song in this journal, I fear that many Californians will have to observe *Zonotrichia coronata* closely before they can appreciate my comparison of songs.

Alma's Thrush in Colorado.

MR. HARRY C. OBERHOLSER in the *Auk* Oct. 1898 describes this new thrush and says: Montana, Colorado and Texas have both *swainsoni* and *almæ* during migration. He gives lists of specimens from Colorado as follows; Clear Creek, Twin Lakes, Denver nd Colorado Springs. I collected a male May 20th, 1900. It was in company with several others in a clump of cottonwoods along a small branch of the Poudre River inside the city limits of Fort Collins. The day was cloudy with a fine drizzling rain that had set in the night before making everything dripping wet but that did not dampen their spirits as they were singing as only a thrush can sing. They were very shy keeping among the leaves in the topmost branches, and it was with difficulty I secured one. Dr. A. K. Fisher kindly identified it for me.

Prof. Cooke's list and first appendix to same were published before Mr. Oberholser described it, but in his second appendix published May 1900, by some oversight he omitted it.

WILLIAM L. BURNETT.

Fort Collins, Colo.

Eggs From American Barn Owls in Captivity.

AT THE Northern Division meeting in Alameda May 7, 1898 a paper entitled "The American Barn Owl in Captivity" by myself was read, describing a brood of downy owlets recently taken, and their habits in confinement. As a sequel I will furnish a few other notes concerning the later life of the three survivors. After their plumage was well formed I decided that the box in which they were raised was too small for them, so fenced off a space under a pigeon house, whose floor was six feet from the ground. A shed and fence on two sides of the cage, which was about ten feet square, shut out considerable light. The floor was dry and sandy and two nail kegs were nailed up close to the roof and slanted downward toward the bottom.

Then I had considerable difficulty in transferring the owlets into a sack. They fought viciously at my gloved hand with beaks and talons. If they had been handled daily from infancy I doubt if their wildness or ferocity could have been overcome, except to that certain degree which is influenced by hunger and habit of forced observation on the attendant's movements. When first liberated in this enclosure they flopped about wildly, hissing in evident terror, and finally flopped into one of the nail kegs. After this they were not intruded upon for some days but always made a physical commotion, beating about the cage, at my entrance.

During the day they remained quiet but at dusk began their hisses. This hiss of voluntary origin was unlike the hiss caused by their defensive attitude, both in sound and intervals of frequency. A pail of water was set into the enclosure but I could not determine that they had much use for it either as a beverage or an ablution.

No live rodents were ever served with their menu, because there were very few about the yard at this time,

and if any entered the cage to feed upon the leavings of what the owls were fed, they were probably pounced upon and consumed instanter. Illustrating the pouncing act, when the owls were very hungry and I threw a morsel of food of familiar variety into the cage, an owl would drop out of the keg and onto the "prey" in less time than the force of gravity allows. Generally the other two birds waited a longer or shorter interval after the first one alighted, just as the first one at times was more or less eager. Often I would have to move away a few feet before the first owl would come out of the keg where they remained all day. They were fed upon raw meat, dead poultry and even dead cats and generally had an overabundance of food before them. Whether stale food was bad for them or not is a doubt in my mind.

Two of the owls seemed to be of one sex because one bird kept in a cage by itself and the other two were always together. On Feb. 12, 1899 I heard the two birds chuckling and "talking" to each other, and remembering the pair that nested in 1888 on my third-story balcony had acted in this manner over their eggs, I entered the cage and found one egg in the keg occupied by the two birds and both birds in the keg.

Knowing it requires about two weeks to produce a set, they were not disturbed, but on the morning of the 19th I found a dead owl but had no chance to determine if it was the unmated one. By the 26th they all died and the first two dead ones were partly eaten by their survivor, although sufficient food was at hand. On this day a second egg was found in the keg. Both eggs were fresh and show no variation when compared with a series from wild relations.

As to the owls' sudden demise I can only conjecture that the sameness of food constantly may have hastened the end, and that the lack of exercise had hardly any influence upon birds under a year old. The last bird was a female and poor in plumage. The shaft feathers were in good order and those of the back were fairly abundant, while the frill about the face was rather scant and the feathers thence down along the under parts were not numerous enough to make a good specimen.

The bones and carcasses and the commentably small number of regurgitated pellets were raked out and hauled away and the cage converted into a chicken coop. The hens now lay eggs in the nail kegs but the monkey-faces of the aboriginal owners no longer peer over the rims in response to my footsteps. I always regretted that these owls were so unmanageable or I should have turned them loose to prey upon the rats infesting the chicken yard. A Barn Owl does more good in destroying rodents than five good cats.

There are one or more pairs of Barn Owls about the town of Alameda and where they nest has always been a mystery to me. On calm nights they are often heard overhead "clicking" and chuckling, and I have detected four notes of this species the other two being hisses. The owls I had in captivity never sounded the "clicking" notes, which may be likened to the sound of a slow-moving fishing reel. My regret is that I did not take more time to study the habits, especially the food influence upon captives. Mr. H. R. Taylor has had numerous species of raptores in his "raptory," including a Barn Owl, but it had only a Horned Owl for a mate and did not produce any eggs; neither did the Western Redtails,the Golden Eagle, the Duck Hawks, nor the White-tailed Kites.

Sets of Barn Owl's eggs are found earlier in certain years than in others. In 1899 my birds began Feb. 12, and from several pairs of wild birds six fresh eggs were taken from one pair on April 27, and in the nest from which my captive birds were taken were three eggs on April 19 as the two earliest records. In 1900 the first eggs were: March 24, six eggs, incubation fresh to

slight. In the nest where my birds were taken (on this same date) were one fresh egg, two fresh or addled, two with small embryos, three with very large embryos, one egg pipped, and one owlet; total, ten eggs.

I thought Feb. 12 an extra early date but considered it influenced by dry shelter and plenty of food, but in the case of this large set the first egg must have been laid about March 1. On the same date another nest held four fresh eggs; another held one fresh egg. On March 30 one nest held two eggs and several owlets. Individual birds certainly lay earlier annually than others, as does the parent? bird of these captive owls and the hereditary transmission was perhaps over-transmitted to the offspring. DONALD A. COHEN.

Alameda, Cal.

Nesting of Spatula clypeata.

WHILE collecting some specimens of the Salt Marsh Song Sparrow (*Melospiza melodia pusillula*) on the salt marsh April 25, 1901, I noticed on starting out from the edge of the marsh a pair of ducks which were flying toward the waters of the bay.

After working over the marsh for several hours I started back and when half way across I again saw a pair of ducks headed inland, but thought nothing of it until a single duck started up ten feet from me and 300 yards from the mainland.

On going to the spot there lay a nest in open sight on the bare ground among the salt-weed. It was not over four inches off the ground and contained fourteen eggs. The nest was composed of dry stems of the salt-weed, lined with down and a few feathers from the parent bird, and measured fourteen inches across the top with a depth of five inches.

The eggs were of a dull grayish-green or olive color, about two-thirds incubated and lay well embedded in the down of the nest. If the female had not flushed I should not have found the nest.

On March 28, 1886 I took a set of this same species, placed on the sand under a low bush, 150 yards back from the bay shore. The nest was constructed in a very similar manner to the one above described. In this case I got my head within three feet of the close-setting female before she flew, the male joining her before reaching the bay. The Shoveller is becoming more common on the salt marshes from year to year.

W. OTTO EMERSON.

Haywards, Cal.

A Visit to the Herons.

ON THE morning of April 4, 1901 Mr. R. Smith and the writer started on bicycles to visit a heronry about six miles from town. We passed the Napa State Insane Asylum one and one-half miles out at nine o'clock and reached the heronry half an hour later. It was found to be thickly populated with Great Blue Herons (*Ardea herodias*), known to their human neighbors familiarly as cranes.

This heronry is situated on the summit of an eminence known as Greenwood's hill and does not at all resemble the dismal-like heronries I have read of so often. The trees are chiefly live-oaks and contain, in some cases, as many as eleven nests. We carried a ¾-inch rope about 80 feet long, a satchel for the eggs and a tape-line for measuring heights. After considerable difficult climbing we secured a number of sets of eggs from the rather bulky nests of sticks.

In the live oaks the nests can be best seen from below, and from a distance a tree containing several nests does not appear to be tenanted. The birds usually perched near the nests and were easily seen. On the trip Barn Owls, Sparrow Hawks, Californian Woodpeckers and Brewer's Blackbirds were especially numerous while many other species were represented.

LEON HOTTEL.

Napa, Cal.